

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

**BOLIVARIAN REPUBLIC OF VENEZUELA**

**SUPPORT FOR RURAL AND SMALL-TOWN WATER SUPPLY  
SYSTEMS**

**(VE-0140)**

**LOAN PROPOSAL**

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## BASIC SOCIOECONOMIC DATA

For basic socioeconomic data, including public debt information, please refer to the following address:

**English:**

<http://www.iadb.org/RES/index.cfm?fuseaction=externallinks.countrydata>

**Spanish:**

<http://www.iadb.org/RES/index.cfm?fuseaction=externallinks.countrydata>

## ABBREVIATIONS

CAF	Andean Development Corporation
EHRs	Empresas Hidrológicas Regionales [regional water companies]
FIDES	Fondo Intergubernamental para la Descentralización [Intergovernmental Decentralization Fund]
HDI	Human Development Index
HIDROLARA	Compañía Hidrológica Venezolana
HIDROVEN	Compañía Anónima Hidrológica Venezolana
MARN	Ministry of the Environment and Natural Resources
MDP	Ministry of Planning
MSDS	Ministry of Health and Social Development
O&M	Operating and maintenance
OC	Ordinary Capital
OE	operating entity
ONDESAPS	Oficina Nacional de Desarrollo del Sector de Agua Potable y Saneamiento [National Office for Development of Water and Sanitation Services]
PEU	project executing unit Saneamiento [National Superintendency of Water and Sanitation Saneamiento [National Water and Sanitation Development Office]
SAVIR	Servicio Autónomo de Vivienda Rural [Rural Housing Authority] Services]
SIMOP	Modelo de Simulación de Obras Públicas [Public Works Simulation Model]
SNSAPS	Superintendencia Nacional de los Servicios de Agua Potable y Saneamiento [National Superintendency of Water and Sanitation Services]
UGA	Unidad Regional de Gestión Autónoma [Autonomous Management Unit]
WTP	willingness to pay



## VENEZUELA

### IDB LOANS

APPROVED AS OF OCTOBER 31, 2002

	US\$Thousand	Percent
<b>TOTAL APPROVED</b>	<b>3,779,357</b>	
DISBURSED	3,368,057	89.1%
UNDISBURSED BALANCE	411,300	10.9%
CANCELLATIONS	1,461,543	38.7%
PRINCIPAL COLLECTED	1,207,257	31.9%
<b>APPROVED BY FUND</b>		
ORDINARY CAPITAL	3,605,103	95.4%
FUND FOR SPECIAL OPERATIONS	101,393	2.7%
OTHER FUNDS	72,861	1.9%
<b>OUTSTANDING DEBT BALANCE</b>	<b>2,160,800</b>	
ORDINARY CAPITAL	2,160,800	100.0%
FUND FOR SPECIAL OPERATIONS	0	0.0%
OTHER FUNDS	0	0.0%
<b>APPROVED BY SECTOR</b>		
AGRICULTURE AND FISHERY	437,818	11.6%
INDUSTRY, TOURISM, SCIENCE TECHNOLOGY	443,535	11.7%
ENERGY	894,700	23.7%
TRANSPORTATION AND COMMUNICATIONS	290,705	7.7%
EDUCATION	153,832	4.1%
HEALTH AND SANITATION	304,050	8.0%
ENVIRONMENT	47,657	1.3%
URBAN DEVELOPMENT	83,871	2.2%
SOCIAL INVESTMENT AND MICROENTERPRISE	132,189	3.5%
REFORM PUBLIC SECTOR MODERNIZATION	970,968	25.7%
EXPORT FINANCING	1,404	0.0%
PREINVESTMENT AND OTHER	18,629	0.5%

\* Net of cancellations with monetary adjustments and export financing loan collections



INTER-AMERICAN DEVELOPMENT BANK  
Regional Operations Support Office  
*Operational Information Unit*

# VENEZUELA

## STATUS OF LOANS IN EXECUTION AS OF OCTOBER 31, 2002

(Amounts in US\$ thousands)

APPROVAL PERIOD	NUMBER OF PROJECTS	AMOUNT APPROVED *	AMOUNT DISBURSED	% DISBURSED
<b><u>REGULAR PROGRAM</u></b>				
Before 1996	6	923,873	755,189	81.74%
1996 - 1997	6	115,121	80,387	69.83%
1998 - 1999	1	100,000	18,879	18.88%
2000 - 2001	3	127,500	1,200	0.94%
<b>TOTAL</b>	<b>16</b>	<b>\$1,266,494</b>	<b>\$855,655</b>	<b>67.56%</b>



**Inter-American Development Bank**  
Regional Operations Support Office  
Operational Information Unit

## Venezuela

### Tentative Lending Program

#### 2002

Project Number	Project Name	IDB US\$ Millions	Status
VE0140	Minor Rural Population Aqueduct Attention	24.0	
<b>Total - A : 1 Projects</b>		<b>24.0</b>	
<b>TOTAL 2002 : 1 Projects</b>		<b>24.0</b>	

#### 2003

Project Number	Project Name	IDB US\$ Millions	Status
VE0129	Preinvestment Systems	15.0	
VE0114	Housing Sector Support Program	180.0	
VE0138	Basic Education Program II	125.0	
<b>Total - A : 3 Projects</b>		<b>320.0</b>	
VE0115	Citizen Security and Coexistence	30.0	
VE0139	Registry and Notary System Modernization	15.0	
<b>Total - B : 2 Projects</b>		<b>45.0</b>	
<b>TOTAL - 2003 : 5 Projects</b>		<b>365.0</b>	
<b>Total Private Sector 2002 - 2003</b>		<b>0.0</b>	
<b>Total Regular Program 2002 - 2003</b>		<b>389.0</b>	

**\* Private Sector Project**



# VENEZUELA

## SUPPORT FOR RURAL AND SMALL-TOWN WATER SUPPLY SYSTEMS (VE-0140)



### STATES

- |              |                 |
|--------------|-----------------|
| ① ZULIA      | ⑬ ARAGUA        |
| ② TÁCHIRA    | ⑭ GUÁRICO       |
| ③ MÉRIDA     | ⑮ VARGAS        |
| ④ BARINAS    | ⑯ MIRANDA       |
| ⑤ TRUJILLO   | ⑰ ANZOÁTEGUI    |
| ⑥ FALCÓN     | ⑱ SUCRE         |
| ⑦ LARA       | ⑲ NUEVA ESPARTA |
| ⑧ PORTUGUESA | ⑳ MONAGAS       |
| ⑨ APURE      | ㉑ DELTA AMACURO |
| ⑩ YARACUY    | ㉒ BOLÍVAR       |
| ⑪ COJEDES    | ㉓ AMAZONAS      |
| ⑫ CARABOBO   |                 |

This map, prepared by the Inter-American Development Bank, has not been approved by any competent authority and its inclusion in the loan document has the exclusive objective of indicating the area of influence of the project proposed for financing.

Sustainable Development Department  
Information Technology for Development Division  
Geographic Information System (SDS/gis) 11/22/02

## SUPPORT FOR RURAL AND SMALL-TOWN WATER SUPPLY SYSTEMS

(VE-0140)

### EXECUTIVE SUMMARY

<b>Borrower:</b>	Bolivarian Republic of Venezuela	
<b>Guarantor:</b>	Bolivarian Republic of Venezuela	
<b>Executing agency:</b>	Compañía Anónima Hidrológica Venezolana (HIDROVEN)	
<b>Amount and source:</b>	IDB (OC):	US\$28 million
	Local:	<u>US\$12 million</u>
	Total:	US\$40 million
<b>Financial terms and conditions:</b>	Amortization period:	25 years
	Grace period:	4.5 years
	Disbursement period:	4 years
	Interest rate:	variable
	Inspection and supervision:	1%
	Credit fee:	0.75%
	Currency:	U.S. dollars, Single Currency Facility
<b>Objectives:</b>	<p>The objective of this program is to increase both coverage and the rate of consumption of water and sanitation services, and to reduce the incidence of water-borne diseases in low-income communities of less than 5,000 inhabitants. An additional aim of the program is to implement a mechanism that will smooth the institutional transition of the rural water supply sector to the municipalities.</p>	
<b>Description:</b>	<p>Rural communities have lacked the resources needed for operation and maintenance of local water supply systems, resulting in their deterioration and leaving these communities with inadequate services (poor water quality and frequent interruptions). Through the present operation, the government hopes to initiate change in the sector by financing projects in which low-income communities with less than 5,000 inhabitants agree to create operating entities (OEs) to administer, operate and maintain water and sanitation systems on a fee-for-service basis. This operation is consistent with the new regulatory and decentralization policy signaled by the recent passage of the law governing the water and sanitation sector which transfers</p>	

responsibility for water and sanitation services to the municipalities, and authorizes the latter to assign the operation of such services in rural areas to community organizations.

The project will have four components: (a) institutional strengthening and technical assistance; (b) studies to prepare projects; (c) investments and equipment; and (d) job retraining.

**1. Institutional strengthening and technical assistance  
(US\$5.8 million)**

The objective of this component is to provide strengthening for the parties involved in the program, notably the: (i) communities; (ii) Autonomous Management Units (UGAs); and (iii) municipalities. Under this component, the communities will receive training in the administration, operation and maintenance of the systems. The UGAs will likewise receive training enabling them to provide technical assistance for communities in the operation and maintenance of the systems built or rehabilitated under the program. In the event a UGA has yet to be created, the respective regional water company (EHR) will receive this training instead. The municipalities will obtain training to help them carry out evaluation and monitoring duties. This component will also fund activities for promotion of the program.

**2. Designs and studies (US\$2.2 million)**

This component has as its object the commissioning of the studies required for preparation of the projects not included in the sample, the establishment of the baseline figures against which the results of the program can be measured in each target community, and the engineering designs necessary for rehabilitation and/or expansion of the systems.

**3. Investments and equipment (US\$25.5 million)**

The objectives of this component are to carry out the engineering works, to procure and install the equipment and other fixtures needed for the infrastructure of the water and sanitation systems, and to provide technical assistance during startup of the system (first six months). This component will also provide the equipment required to support the management capacity of communities and municipalities targeted by the program. This component is expected to benefit some 100,000 rural inhabitants in approximately 50 different communities.

#### **4. Job retraining (US\$500,000)**

This component will be financed by the local contribution and is limited to job retraining programs for the operators of some of the systems affected, who are currently employed either by the municipalities or other local governments. This component will cover the cost of terminating the employment contracts of approximately 50 operators and providing the necessary training in order that they may find work of a similar nature.

**The project in the context of the Bank's country and sector strategy:**

The present operation is in line with the strategic institutional and social areas. On the institutional side, this operation will support the transfer of water and sanitation services to municipalities as required by law, and provide the means for ensuring sustainable investment in sanitation services for rural areas by encouraging user participation in the management of these services through functionally and financially autonomous operators. In terms of social development, the present operation will provide funds for investment in water and sewerage systems serving primarily towns with less than 5,000 low-income inhabitants, including the most vulnerable groups in the rural sector.

**Coordination with other official development agencies:**

The Venezuelan authorities decided to finance the water and sanitation sector plan with resources from the CAF, the IDB and bilateral cooperation agencies, under the coordination of HIDROVEN and according to the following area distribution: (i) urban systems, the CAF; and (ii) rural systems, the IDB. The bilateral agencies will finance specific projects with the same general policy framework (paragraph 1.17).

**Environmental and social review:**

At its meeting on 18 October 2002, the Technical Review Group of the Committee on Environment and Social Impact (CESI/TRG) analyzed the Profile II of the operation and requested an environmental analysis. The CESI/TRG recommendations have been incorporated into this document.

**Benefits:**

The program seeks to extend the coverage of water and sanitation services to rural communities with less than 5,000 inhabitants that currently lack these services, which will raise the quality of life for this mostly low-income population. The main value added of the program is that it fosters the creation of operating entities (OEs) to manage water and sanitation systems and the development of a payment-for-service culture that will eventually be replicated throughout the country. This effort, in combination with the new legislation, will make rural water and sanitation systems financially self-sustaining.

**Risks:** **Willingness to pay.** Traditionally, rural water and sanitation systems have been operated by government agencies whose job it was to supply communities with water and sanitation facilities without charging for the service. This program requires a cultural change that needs to be assimilated by the communities in advance. To this end an education module has been designed which will raise awareness of the costs involved in providing these services, and the need to pay these costs in the form of fees for service. The articles of incorporation creating the OEs will specify the necessary mechanisms to enable operators to maximize fee collection, including interruption of service.

**Institutional support.** Risk: The proposed program calls for a major change in the financing of operations in Venezuela's water and sanitation sector, which has traditionally relied on the State for universal subsidies and nonsustainable investments. This program marks a significant departure from that arrangement, introducing sustainability as its key requirement based on the principles laid down in the new law governing the sector. There is a risk that the criteria established in the law and reflected in this program may not be accepted by all of the traditional stakeholders involved. **Mitigation:** **The incentives built into the program and the legal regulations agreed upon for the program will lessen this risk.**

**Participation by the municipalities.** Risk: Lack of participation by the municipalities in providing the required 20% local counterpart. Mitigation: By law, the municipalities are required to deliver water and sanitation services. This program represents an incentive for the municipalities since 80% of the needed investments in rural water supply systems are being financed. In addition, the program supports the municipalities' work by simplifying the procedures for obtaining FIDES funding and by providing training for municipal staff that will provide support to the project.

**Special contractual clauses:**

**1. Conditions precedent to the first disbursement:**

(i) Creation and placement in operation of the project executing unit (PEU) (paragraph 3.3); (ii) entry into force of the program's Operating Regulations (paragraph 3.13); (iii) signing of agreement with HIDROVEN for the transfer of resources (paragraph 4.1); (iv) entry into force of the regulations pursuant to the new law mandating the supply of water and sanitation services in accordance with terms and conditions agreed to in advance with the Bank (paragraph 5.2).

## **2. Conditions during the execution period:**

(i) Carry out the midterm review (paragraph 3.26); (ii) conduct an environmental audit (paragraph 3.27); and (iii) conduct the ex post evaluation (paragraph 3.28).

## **3. Other obligations during execution:**

(i) Financial audit (paragraph 3.25); (ii) cost recovery (paragraph 5.28); and (iii) operation and maintenance (paragraph 3.18).

### **Poverty-targeting and social sector classification:**

This operation qualifies as a social equity enhancing project, as described in the indicative targets mandated by the Bank's Eighth Replenishment (document AB-1704). Furthermore, this operation qualifies as a poverty-targeted investment or PTI on geographical grounds (paragraph 5.31). The borrower will be using the 10 percentage points in additional financing (paragraph 2.9).

### **Exceptions to Bank policy:**

None.

### **Procurement:**

Procurement of goods and related services and works contracts will be carried out by HIDROVEN through the PEU in accordance with the Bank's rules and procedures as stipulated in Annex B to the loan contract. International competitive bidding must be used for the purchase of goods valued at US\$350,000 or more, or construction works valued at US\$3 million or more. The contracting of consulting services will be in accordance with the provisions of Annex C to the loan contract, with selection of firms by international competitive bidding in the case of contracts valued at more than US\$200,000. Tenders for amounts below the above-mentioned thresholds will be as specified in the laws of Venezuela, which are compatible with the Bank's procedures. Annex III-2 contains the Tentative Procurement Schedule.

## **I. FRAME OF REFERENCE**

### **A. The water and sanitation sector**

#### **1. Institutional aspects**

- 1.1 Venezuela began decentralizing this sector in 1991 and although provision of water and sanitation services was assigned to municipalities under the new legislation, few have taken on this responsibility.<sup>1</sup> For this reason, the government—also in 1991—decided to transfer management of these services on a temporary basis to 10 regional water companies (EHRs), which cover all of the states.<sup>2</sup>
- 1.2 The EHRs are part of the Compañía Anónima Hidrológica Venezolana (HIDROVEN), the principal shareholder of which is the Ministry of the Environment and Natural Resources (MARN). They are responsible for provision of services in urban areas and now, in some cases, also provide support for the administration of rural water supply systems. Their duties are described in chapter III, section A-1.
- 1.3 In rural areas and small town with less than 5,000 inhabitants, responsibility for construction, operation and maintenance of water and sanitation systems is shared between the EHRs, departmental governments, some municipal administrations, and the Servicio Autónomo de Vivienda Rural [Rural Housing Authority] (SAVIR), an autonomous agency under the Ministry of Public Works and Government Services which is responsible for building and rehabilitating waterworks as part of its rural housing mandate.
- 1.4 This institutional arrangement is undergoing a change following promulgation of the Law Establishing the Water and Sanitation Services System in December 2001. This law—prepared with the Bank’s support—creates a new institutional structure for the sector in which the regulatory function, policy formulation and the actual provision of services are kept separate from one another. In addition, the law defines an economic-financial system including a set of principles for determining rates and subsidies, possible management systems and how private individuals may participate in the provision of services. In a chapter dedicated to rural water supply systems, the new law defines these as systems serving fewer than 2,500 inhabitants, requires that their services meet quality standards, and specifies who will be allowed to manage systems and the conditions for their transfer. Under the new rules, systems may be operated by cooperatives, civil organizations, private-sector service providers and other types of NGOs, under contract to the respective

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<sup>1</sup> Specifically, the water and sanitation systems in the states of Lara and Monagas were transferred to local municipalities under operations supported by the IDB (loan 994/OC-VE) and the World Bank.

<sup>2</sup> With the exception of Bolívar, Amazonas and Delta Amacuro, in which water and sanitation services are administered by the Corporación Venezolana de Guayana (CVG).

municipality. This contract will specify the minimum conditions for service providers, payment mechanisms, rate schedules and financing arrangements.<sup>3</sup> Another important feature of the law, in addition to establishing the above-mentioned principles, is that it gives HIDROVEN a deadline of one year (December 2002) to draw up regulations for rural water supply systems. The Bank is overseeing the preparation of this document and has reviewed the drafts produced so far. The final regulations will be in accordance with the Bank's policies for the sector and for the present operation.

- 1.5 To monitor and enforce these regulations, the law also creates the National Superintendency of Water and Sanitation Services (SNSAPS), which will report to the Ministry of Production and Trade.<sup>4</sup> Planning responsibilities and ultimate oversight of the sector are assigned to the MARN's National Office for Development of Water and Sanitation Services (ONDESAPS). Venezuela's municipalities are made responsible for providing the actual services, and may either create a municipal enterprise for this purpose or delegate the responsibility under a service contract, with the prior approval of the SNSAPS. The law also creates the National Supervisory Agency (EGN) to manage large-scale water and sanitation systems. Finally, the law sets deadlines affecting all of these institutions: the ONDESAPS and the SNSAPS must be established and in operation by the end of 2003, and the EHRs are given five years (by 2006) to transfer water and sanitation systems to the municipalities, for which purpose they are to create financially self-sustaining Autonomous Management Units (UGAs) (paragraph 4.3). Under the law as well, HIDROVEN is given the task of acting as the sector's temporary regulatory and oversight authority. HIDROVEN will carry out this institutional transformation under a recently approved loan from the Andean Development Corporation (CAF) (paragraph 1.16).

## **2. The sector's coverage and economic performance**

- 1.6 The short-term challenges facing the sector are to reverse the recurrent financial deficits incurred by the EHRs and reduce non-revenue water losses from the current level of approximately 50%. Coverage figures under water and sanitation services in 1998 were as shown in Table 1.1. Wastewater treatment systems cover 28% of the country.

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<sup>3</sup> Law Establishing the Water and Sanitation Services System, Title V, Chapter II on rural water systems.

<sup>4</sup> The SNSAPS was created by law to serve as an independent public sector regulatory agency with its own capital. The law guarantees its independence by ordering that its operations be financed by billing water companies for its services.



**Table 1.1**  
**Coverage under Water and Sanitation Services in 1998**  
**(in US\$ millions)**

Sector	Population		Water Supply System		Sewage Collection System	
	N° of inhabitants	%	Population with in-house service	%	Population hooked up to the system	%
Rural	3.4	14	1.6	46	1.2	36
Urban	20.6	86	18.1	88	14.8	72
Total	24.0	100	19.7	82	16.0	67

Source: HIDROVEN

### **3. Water supply systems in towns with less than 5,000 inhabitants**

- 1.7 In Venezuela, the operating and maintenance costs for water supply systems have traditionally been paid out of the revenues of federal and state administrations, through the SAVIR and departmental governments.<sup>5</sup> This dependence on national and state budgets has acted as a disincentive for both municipalities and clients, who are generally not charged for the service, hastening deterioration of systems and increasing the cost of providing services with equipment clearly in need of repair. The biggest loser in this situation is the community itself, which does not receive good quality water, at the same time as costs and spending on these systems is rising and the need to make the best possible use of national and state resources is being undermined. The poor quality of the water supplied is reflected in a lowering of life expectancy by up to 15% in some municipalities.<sup>6</sup>
- 1.8 By 2001, Venezuela had an officially recorded total of 2,733 rural water supply systems, of which 1,552 (57%) were being operated by the SAVIR, 740 (26%) by the EHRs, 46 (2%) by municipalities, and 395 (15%) by private-sector associations and departmental governments. A study conducted by the government found that the majority of municipalities were refusing to take over the services in question, claiming insufficient resources, organizational weaknesses and lack of technical capacity. Also, some of these rural systems were being operated by departmental governments which, when the shift in responsibility was announced, attempted unsuccessfully to have the municipalities accept the operators of these services as municipal employees. Currently, these systems are being operated mainly by employees of the municipalities or the EHRs, with the latter providing additional technical assistance.

<sup>5</sup> In the last five years, the SAVIR has spent US\$33.3 million on 664 water support systems, and 437 sewer systems. (Source: Ministry of Infrastructure)

<sup>6</sup> Source: National Statistics Institute.

- 1.9 To cope with these problems, and at the same time fulfill its new legal mandate, HIDROVEN designed and initiated a pilot program under which operating entities (OEs) made up of representatives of the service community are created, assisted in obtaining legal status, and given training enabling them to manage the systems under a service contract with the respective municipality. These OEs are the result of a community participation project in which local groups that have come together to form a legally recognized association receive training in the financially self-sustaining operation of water and sanitation systems. To date over 120 communities have shown interest and approached HIDROVEN with a request to participate in the pilot program, which will be financed with resources from the proposed IDB Loan.
- 1.10 To establish uniform rules for the financing of rural water supply systems and in accordance with its legal mandate, HIDROVEN drew up and delivered to the MARN for consideration and submission to the Council of Ministers the proposed regulations for the new sectoral law which set out principles followed by this operation, and which: (i) formally require entities undertaking the financing of rural sanitation systems to acknowledge the obligation to operate such systems on a financially self-supporting basis; (ii) provide for works financed with government funds, (whether national or subnational) to be organized in a manner that guarantees efficient administration, operation and maintenance under a form of management, including self-managed operation by the community served; (iii) establish the principles and methods of collecting fees for services (rate based on usage, family rate, fee per connection, etc.); (iv) define the rules for subsidies applied to basic water consumption fees in the case of clients with limited ability to pay; and (v) require that the financial rules agreed to with the Bank under the present program be applicable to all public financial agents within Venezuela.

**B. Venezuela's strategy in the sector**

- 1.11 The government's strategy toward this sector is based on the National Economic and Social Development Plan, 2001-2007, which: (i) calls for establishing a modern institutional framework for the sector as set out under the new law governing the sector, which creates new operating entities and provides that responsibility for services be transferred to municipalities; and (ii) proposes the implementation of programs to reduce poverty levels, particularly in rural areas, to which end it advocates the creation of programs such as the present operation which provides support for rural and small-town water supply systems.
- 1.12 In accordance with its strategy for the rural sector, and after conducting a critical evaluation of its experience in financing rural water systems, the government designed this program which will introduce the following innovative elements for the sector in Venezuela, which are in line with the Bank's policy for the sector: (i) the adoption of sustainability as the guiding principle behind investments in the rural sector in order to guarantee optimal use of the State's resources and secure

maximum benefits for communities; (ii) the engagement of target communities—from the conceptual design stage right through the operation and maintenance of systems—as a means of guaranteeing long-term sustainability; (iii) the adoption of the institutional and financial principles set out in this program as the standard for public investment in rural water and sanitation systems; (iv) the use of national, state and municipal resources to fund a highly targeted subsidy intended to improve living conditions within low-income communities; and (v) the adoption of a program in which the association of two levels of government (national and municipal) permits effective decentralization of these systems.

### **C. The Bank's strategy for the sector**

- 1.13 The Bank's strategy for Venezuela focuses on four strategic aspects: (i) social, aimed at reducing poverty and developing human capital; (ii) economic, designed to raise productivity and diversify the economy; (iii) institutional, which seeks to strengthen public sector institutions; and (iv) science and technology, intended to generate and use knowledge. For the water and sanitation sector, the Bank's strategy has been to create modern institutions prior to financing investments.
- 1.14 The present operation comes under the heading of strategic institutional and social programs. On the institutional side, this operation will support the transfer of water and sanitation services to municipalities as required by law, and provide the means for ensuring sustainable investment in sanitation services for rural areas by encouraging user participation in these services through functionally and financially autonomous operators. In terms of social development, the present operation will provide funds for investment in water and sewerage systems serving primarily towns with less than 5,000 low-income inhabitants, including the most vulnerable groups in the rural sector.

### **D. Activities by the Bank and other agencies in the sector and lessons learned**

- 1.15 Since 1987 the Bank has approved four loans in the water and sanitation sector totaling US\$333.4 million. One, currently in execution and entitled Modernization of the Water Supply and Sanitation Sector, has provided resources for the design and implementation of a national regulatory framework (through the hiring of consultants to develop the law governing this sector, as well as design the present operation); the decentralization of water and sanitation services to the municipal level in the state of Lara, (and the recruitment of a private-sector firm to provide integrated management services to Hidrolara); and the execution of rehabilitation works on the water and sanitation systems of the state of Lara. The loan was declared eligible in August 1998, and the deadline for disbursements is May 2003, with 100% of the resources committed.
- 1.16 Several other projects are being carried out in the sector with funding from bilateral and multilateral sources led by the CAF which recently (October 2002) approved a

loan in the amount of US\$174.8 million for projects in this sector entitled “Program of Support for Reorganization of the Water and Sanitation Sector” and “Rehabilitation, Expansion and Institutional Development of the Systems in Táchira, Barinas, Guárico, Apure, Trujillo, Nueva Esparta, Cojedes, Sucre and Ciudad Guayana”. In addition to construction works in these states, this operation is financing creation of the ONDESAPS and the SNSAPS, as well as UGAs to replace the EHRs in transferring responsibility from HIDROVEN to the municipalities. Additional financing in the amount of US\$53 million is being provided by various bilateral agencies, plus US\$39 million from the World Bank to finance a management contract for the state of Monagas in 1999.

- 1.17 The Venezuelan authorities decided to finance the water and sanitation sector plan with resources from the CAF, the IDB and bilateral cooperation agencies, under the coordination of HIDROVEN and according to the following area distribution: (i) urban systems, the CAF; and (ii) rural systems, the IDB. The bilateral agencies will finance specific projects with the same general policy framework.
- 1.18 The Bank’s operations indicate that the most important problem has been the limited institutional capacity of the national and decentralized agencies for carrying out projects. To ensure efficient execution of the present program and avoid setbacks, therefore, the following measures will be taken: (i) creation of an executing unit; and (ii) participation by the communities affected, the members of which can apply direct pressure (see chapter III). This decentralization method, which has not been used in other operations, will play an important role in the present program; and (iii) hiring of consulting firms that will be responsible for preparing the projects according to program requirements set out in the Operating Regulations.

#### **E. The program’s strategy**

- 1.19 The present operation will partially finance execution of projects in poor rural communities of less than 5,000 inhabitants willing to form an organization to manage, operate and maintain water and sanitation systems on a financially self-sustaining basis, without requiring significant investment on their part. This operation will utilize the public sector contribution as an incentive for these communities to create efficient operating entities (OEs) and undertake to pay service rates sufficient to make the systems financially self-supporting. Similarly, the central government’s contribution will provide an incentive for the municipalities to support the program with local resources as a means of assuming the responsibilities assigned to them under the new law.
- 1.20 This portion of the program is designed as an on-demand operation in which the communities, once duly informed, will apply for resources on a first-come, first-served basis. The rules for acceptance of applications are spelled out in the Operating Regulations, which specify all aspects of the program, from the need to

promote it in the communities to the selection criteria and requirements for management of the systems.

- 1.21 This operation qualifies as a poverty-alleviating, geographically-targeted project since its benefits will go exclusively to communities consisting mainly of the rural poor<sup>7</sup>, which are in need of financing for construction of new works or rehabilitation and expansion of existing water supply systems and sewerage facilities for collection and disposal of sewage.

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<sup>7</sup> A community is defined as poor if its Human Development Index (HDI) is lower than the poverty line established by the United Nations (strata 4, 5 and 6 according to the classification adopted by the National Statistics Institute).

## **II. THE PROGRAM**

### **A. Objectives and description**

- 2.1 The purpose of the program is to increase both the coverage and per capita consumption of water and sanitation services, and therefore reduce the incidence of water-borne diseases, in mainly low-income communities of less than 5,000 inhabitants. An additional aim of the program is to implement a mechanism that will smooth the institutional transition of the rural water supply sector to the control of municipalities.
- 2.2 This will be accomplished through a loan for the hiring and supervision of new construction works, rehabilitation and expansion of water and sanitation infrastructure. Financing will also be provided for strengthening the organizational, technical and administrative capacity of affected communities in order to ensure sustainable operation of the water and sanitation systems financed. The program will also include strengthening of the municipalities involved so that they are better able to oversee and evaluate the new management of these systems.

### **B. Components**

- 2.3 The project will have four components: (a) institutional strengthening and technical assistance; (b) engineering designs and studies in preparation for projects; (c) investments and procurement; and (d) job retraining.

#### **1. Institutional strengthening and technical assistance (US\$4.5 million)**

- 2.4 The objective of this component is to provide strengthening for the parties involved in the program, notably the: (i) communities; (ii) UGAs; and (iii) municipalities. Under this component, the communities will receive training in the administration, operation and maintenance of the systems. The UGAs will likewise receive training enabling them to provide technical assistance for communities in the operation and maintenance of the systems built or rehabilitated under the program. In the event a UGA has yet to be created, the respective EHR will receive this training instead. The municipalities will be given training to help them carry out evaluation and oversight duties.
- 2.5 The main activities under this component will consist of: (i) promotional campaign including meetings and seminars to lay out the program in its entirety for municipalities that qualify as low-income areas; (ii) workshops and seminars in these communities to encourage community participation; (iii) community education programs on rational use of water and conservation, prevention of water-borne diseases, maintaining sanitation infrastructure, and determining water rates; (iv) training for community leaders and others in the administration, operation

and maintenance of the services; (v) technical assistance to help communities choose the best type of modality to manage their services; (vi) legal and administrative assistance for communities and municipalities in areas relating to the transfer of water and sanitation services; (vii) training for the UGAs in adapting technical assistance to the rural sector; and (viii) training seminars for municipalities in the supervision and evaluation of management performance.

## **2. Studies and designs (US\$1.5 million)**

- 2.6 This component has as its object the hiring of consultants to carry out the studies required for preparation of the projects (except for those of the sample), including establishment of the baseline figures against which the results of the program can be measured in each target community, along with the studies and designs necessary for rehabilitation and/or expansion of the systems. Among the principal studies required for formulation of each project are: (i) projection of demand for water; (ii) engineering designs for each project; (iii) determination of the rate structure; (iv) cost-benefit analysis; and (v) drawing up the system cadastres. These studies will be carried out for each community that qualifies for the program in accordance with the methodology devised by HIDROVEN and approved by the Bank.

## **3. Investments and equipment (US\$27.12 million)**

- 2.7 The objectives of this component are to carry out the engineering works, to procure and install the equipment and other fixtures needed for the infrastructure of the water and sanitation systems, and to provide technical assistance during startup of the systems (first six months). It should be noted that sewerage systems will be used to collect sewage where economically and financially viable, or otherwise by means of individual solutions. In any case, it will be a requirement for eligibility that all projects include adequate provision for disposal of the sewage generated. With respect to the treatment of sewage, this will be in accordance with the dilution and self-purification capacity of the receiving body and the downstream use of the resource. This component will also provide the equipment required to support the management capacity of communities and municipalities targeted by the program. This component is expected to benefit some 100,000 rural inhabitants in approximately 50 different communities.

## **4. Job retraining (US\$500,000)**

- 2.8 Using resources provided under the local counterpart contribution, this component will finance job retraining programs for the current operators of some of the systems to be transferred who are currently employed by the departmental governments, because those operators could impede the OE implementation process. This component will cover the cost for terminating their contracts up to a maximum of US\$10,000, and provide the necessary training so that they can either

work for the OEs or form a microenterprise and act as the service providers for the OEs. The Operating Regulations for the project will specify the eligibility requirements for participation in job retraining programs, and approximately 50 operators are expected to attend.

## C. Costs and financing

2.9 The Bank will contribute financing covering 70% of the cost for the proposed program, equivalent to US\$28 million drawn from Ordinary Capital (OC) and to be disbursed in United States dollars from the Single Currency Facility in accordance with the Bank's policies, and the terms and conditions shown in Box 2.1. Table 2.1, Costs and Financing provides a breakdown of the budget by categories.

<b>Box 2.1</b>	
<b>Terms and conditions of financing</b>	
Interest rate	Variable
Credit fee	0.75%
Inspection and supervision	1%
Disbursement period	4 years
Grace period	4.5 years
Amortization period (including grace period)	25 years

**Table 2.1**  
**Costs and Financing**  
**(in US\$ thousands)**

Item	Category	Financing [US\$000s]			%
		IDB/OC	Local	Total	
<b>1</b>	<b>Engineering and Administration</b>	<b>1,250</b>	<b>1,200</b>	<b>2,450</b>	<b>6.1</b>
1.1	Project executing unit	500	700	1,200	3.0
1.2	Supervision of work projects	750	500	1,250	3.1
<b>2</b>	<b>Direct Costs</b>	<b>26,320</b>	<b>7,300</b>	<b>33,620</b>	<b>84.1</b>
2.1	Institutional strengthening and technical assistance	3,200	1,300	4,500	11.3
2.2	Studies and designs	1,500		1,500	3.8
2.3	Investments and equipment	21,620	5,500	27,120	67.8
2.4	Job retraining		500	500	1.3
<b>3</b>	<b>Associated costs</b>	<b>150</b>		<b>150</b>	<b>0.4</b>
3.1	Financial auditing	30		30	0.1
3.2	Environmental audits	10		10	0.0
3.3	Ex post evaluation	110		110	0.3
<b>4</b>	<b>Financial Costs</b>	<b>280</b>	<b>3,500</b>	<b>3,780</b>	<b>9.5</b>
4.1	Interest during construction		3,030	3,030	7.6
4.2	Credit fee		470	470	1.2
4.3	Inspection and supervision	280		280	0.7
<b>TOTAL</b>		<b>28,000</b>	<b>12,000</b>	<b>40,000</b>	<b>100.0</b>
<b>%</b>		<b>70</b>	<b>30</b>	<b>100</b>	



2.10 The main investment categories are summarized below:

- a. Engineering and administration (US\$2.45 million). This heading represents 6.1% of the total cost for the program and is made up of the following subcategories:
  - (i) Project executing unit (US\$1.2 million). Includes the consulting services necessary to help the executing agency identify the technical aspects that may arise during construction of the works, and the recruitment of support personnel for bidding competitions and administrative-financial aspects.
  - (ii) Works supervision (US\$1.25 million). This heading includes the hiring of specific consultants to assist the executing agency with supervision of the work projects carried out under the program, and covers the cost of equipment required for this supervision.
- b. Direct costs (US\$33.62 million). This category represents 84.1% of the total cost for the program and includes the following subcategories:
  - (i) Institutional strengthening and technical assistance (US\$4.5 million). Includes recruitment of consultants, preparation of teaching materials and other equipment required for institutional strengthening and provision of technical assistance to communities and municipalities.
  - (ii) Studies (US\$1.5 million). Includes the commissioning of studies needed for preparation of water and sanitation projects in communities qualifying for the program. This heading also includes contracting for studies necessary to solve any technical problems that may arise during execution of works projects.
  - (iii) Investments and equipment (US\$27.12 million). The estimated cost includes labor, materials and equipment required for the purchase, transport, installation and testing of pipes, and the execution of construction works, inspection chambers and engineering works for the expansion and/or rehabilitation of the water supply system. Also included are the costs for labor, materials and equipment for execution of construction works and supply and electromechanical setup of pumping stations and water treatment facilities; labor, materials and equipment required for the purchase, transport, installation and testing of pipes, and the execution of construction works, inspection chambers and engineering works for expansion and/or rehabilitation of sewer systems; and labor, materials and

equipment for execution of construction works and supply and electromechanical setup of pumping stations and sewage treatment facilities.

- (iv) Job retraining (US\$500,000). Includes provision of severance pay and training courses.

### III. EXECUTION OF THE PROGRAM

#### A. Execution plan

- 3.1 The operation is designed as a global multiple-works program which, in accordance with the Operating Regulations, will finance the organization of community participation procedures and investments in water and sanitation infrastructure.

##### 1. Project executing unit

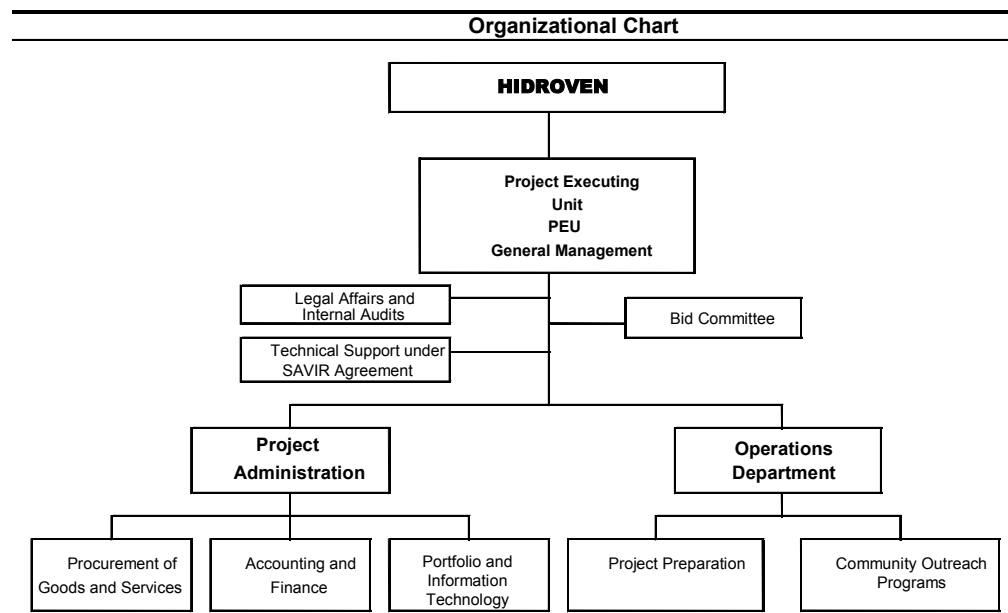
- 3.2 HIDROVEN will be responsible for execution of the program and to this end will create a PEU to provide general coordination of the program's activities according to the dictates of the Operating Regulations, oversee financial administration of the program and take responsibility for coordinating the activities of the other entities participating in the program, conduct bidding and contracting procedures, provide for supervision of the works projects, apply to the MARN for water permits, and carry out such other activities as may be necessary for the success of the program.
- 3.3 To prepare the representative sample HIDROVEN selected a team which, working in coordination with the Bank, prepared the sample projects and the Operating Regulations. The staff involved will eventually form part of the PEU, which will help to ensure the transfer of technical know-how. In addition, the PEU will receive technical support from the SAVIR. **As a condition precedent to the first disbursement, the borrower must demonstrate that it has created the PEU, that it has staffed the Unit with the basic personnel required for its operation, and that it has devised a timetable for incorporating additional staff as required for execution of the program. The minimum staffing requirements for execution of the program are one executive director, one project administrator, one head of operations, one specialist in project preparation, and one community action worker. The hiring of these personnel will be in accordance with the terms of reference previously agreed upon with the Bank.**

##### a. Organizational structure of the PEU

- 3.4 The general management of the PEU will be the sole contact point for the Bank and will act as the legal representative of the project, accountable to both HIDROVEN and the Bank for administrative, technical and financial management. For the performance of its duties, this general management will have the support of the HIDROVEN's Operations and Administration Departments, and its offices for internal audits and legal affairs.

**b. Operating personnel**

- 3.5 The Operations Department will be responsible for drawing up the program's projects, and as such will be in charge of both project preparation and community outreach programs. The project preparation unit will be responsible for verifying that the projects are viable as established in the Operating Regulations, approving disbursement requests for execution of the works, and ensuring that contractors carry out their tasks diligently, within the allotted periods and in accordance with the procedures set out in the Operating Regulations. This unit will also hire specialized works supervision firms to certify the status of work in progress. The community outreach programs unit will be responsible for coordinating activities under the community development component, and where necessary will be authorized to hire consulting firms or NGOs to conduct these activities. This unit will also be responsible for approving requests for payment received from contractors, authorizing the respective payments and preparing disbursement requests.



- 3.6 The administration chief will be responsible for: (a) procurement of goods and services, including preparation of bidding conditions and calls for tender, coordination of the procedure for evaluation of proposals, forwarding of documents to the PEU's Bid Committee for approval and subsequent preparation of contracts; (b) financial administration of the program, including the processing of counterpart funds and requests for disbursements by the Bank, maintaining accounting records and preparing financial statements and other financial information where required; (c) administration of the project portfolio, for which all information on the

execution and attainment of program objectives will be compiled in a data base, including the costs of each system built, operating and maintenance costs, rates, number of customers, and so forth; and (d) general services, which will include administrative support, office equipment, logistics, etc.

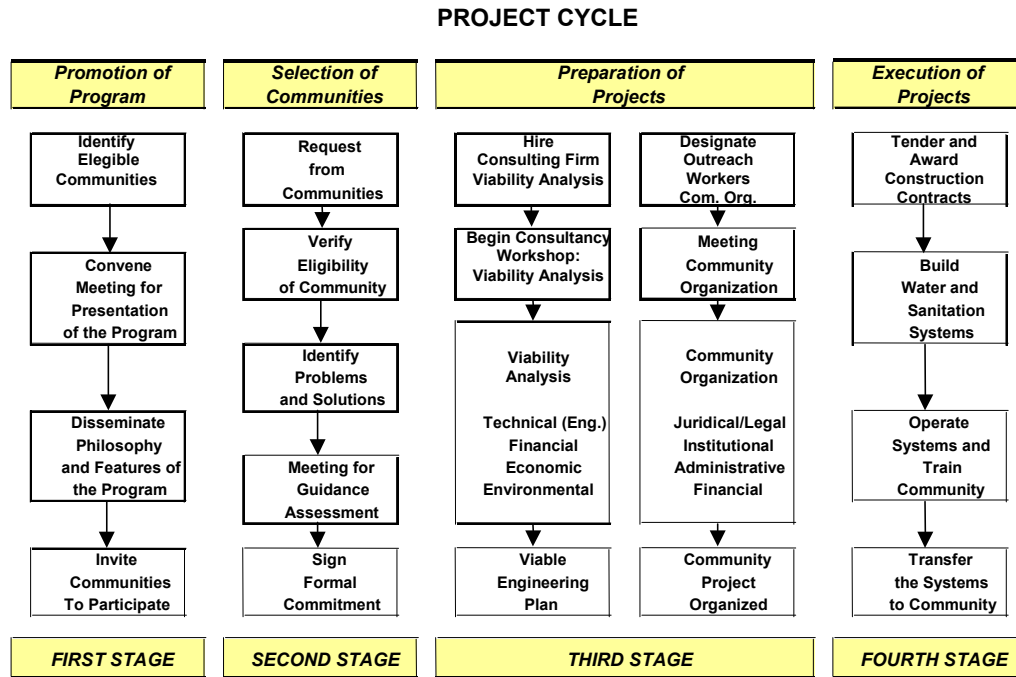
- 3.7 HIDROVEN will provide support in the form of internal financial controls and legal assistance for the PEU. The PEU will create a Bid Committee to review and award tenders where appropriate.

**B. Project cycle**

- 3.8 The project cycle will be divided into four stages: (i) promotion of the program; (ii) selection of communities; (iii) preparation of projects; and (iv) execution of projects.
- 3.9 The object in the first stage, *Promotion of the Program*, is to raise awareness of the benefits and philosophy behind the program, and identify communities that are potentially eligible to participate. This stage will focus on those municipalities that qualify for the program under the eligibility requirements (size of community and poverty level) established in the Operating Regulations. To optimize targeting under the program, the selection of municipalities will begin with the poorest stratum (7 municipalities) as measured by the HDI, stratum 6 followed by those in strata 5 and 4. Within each of the municipalities selected, communities with water and sanitation problems will be identified, whereupon a meeting would be convened for the following participants: municipal authorities, members of the community and the corresponding EHR or UGA. At this gathering, the PEU's community action workers will explain the main features of the program and invite the communities and municipal authorities to participate. The PEU hopes that by the end of the meeting, the communities will have expressed an interest in participating in the program.
- 3.10 The objective of the second stage, *Selection of Communities*, will be to identify those communities that, having been declared eligible to participate, indicate a willingness to take responsibility for their systems and to pay a fee for this service, in which case they will be accepted on a first-come, first served basis. When a community indicates that it is interested, the PEU will first verify that it meets the eligibility requirements and then conduct an initial assessment of the existing infrastructure accompanied by members of the community and municipality in order to identify possible improvements. Next, the PEU will hold a meeting at which the results of the assessment are presented and the scope of the project is again explained, this time in detail and with the emphasis on organization of the community, level of service, and collection of fees, including an estimate of their monthly charges for each level of service and the establishment of a working capital fund. Finally, the PEU will propose that a formal commitment be signed between the municipality, the EHR or UGA, and the community, under which the

community undertakes to manage the system and pay the respective water fees, while the EHR or UGA agrees to provide technical assistance, and the municipality commits to signing a contract with the community for management of the rehabilitated and/or expanded services, to contributing the necessary local counterpart and to supervising and evaluating the system. At this point as well, the community will elect its representatives who will assist with the next stage of the program.

- 3.11 The objective of the third stage, *Preparation of Projects*, is to draw up an economically, financially, environmentally and socially viable project and establish a legally responsible entity to manage the water and sanitation systems in question. The PEU will oversee two activities at the same time by: (a) hiring a consulting firm to prepare the project; and (b) appointing a team of community action workers to work on a community organization. As soon as the consulting firm has been hired, the PEU will organize workshops at which to present the draft project and preliminary designs for the systems. These workshops will be attended by the community representatives who will decide on the level of service (in-house services or public water points, sewerage or individual disposal systems) and the fees associated with these options and levels of service. The work of this consulting firm will culminate in the presentation of a viable engineering project which meets the criteria set out in the Operating Regulations. This engineering project will then be submitted to the program's environmental procedures, incorporating the mitigation measures and/or modifications indicated in accordance with the environmental guidelines contained in the Operating Regulations, and adjusting the cost of the project accordingly. The task of organizing the community will begin with an invitation to a meeting at which the community will: (i) decide the most appropriate type of legal organization to adopt (civil association, cooperative, neighborhood association, or municipal association); (ii) identify the most appropriate means for setting fees, billing customers, collecting and paying for the service; (iii) nominate a committee to supervise the drafting of a constitution and registering the legal status of the association. In addition, the alternative methods of managing these services will be presented, including: (i) self-management; (ii) management by a third-party operator; and (iii) builder-operator system used successfully in Colombia, in which the community selects a builder who will be responsible for the operation of the system for five years after completing construction. Once both of these procedures have been carried out, the municipality and the community will sign the management contract stipulating their respective responsibilities. The Operating Regulations include a model management contract.



- 3.12 The objective in the fourth stage, *Execution of Projects*, is the construction, efficient operation, maintenance and administration of the water and sanitation systems, and timely handover of the management thereof to the community. At first the PEU will tender contracts for construction works and initial operation, maintenance and administration of the systems. The contract for construction works will specify the builder's obligation to operate and maintain water supply systems for the first six months, as well as guaranteeing their optimal operation during at least the first year of service. In addition, the builder must provide training for the community in the operation, maintenance and administration of the system, including collection of fees in the event the self-management option has been chosen. Finally, the systems will be handed over to the organizations created by the community to operate and maintain them, along with operating manuals and designs of the system.

### C. Operating regulations

- 3.13 The program will be governed by the Operating Regulations which will establish eligibility requirements, specify the responsibilities of participating entities from the identification to the operation and maintenance of the construction projects to be carried out, and determine the methods to be used in analyzing these projects. **The borrower must present evidence that the Operating Regulations have been placed in effect. These regulations must be consistent with the terms and conditions previously agreed upon with the Bank.**
- 3.14 The Operating Regulations consist of six chapters as follows: (i) *Description of the Program*, including its purpose, objectives, components, resources and rules; (ii) structure of the *project executing unit*, including its organization, functions,

responsibilities, procedures and liaison with other institutions; (iii) description of the activities under each of the four stages of the *Program Cycle*. The execution cycle consists of 14 activities which are laid out in flow charts showing each activity in sequence, the procedures and decision-making level in the participating entities. The flow of activities is described in narrative form, and pro-forma models are included of all documents generated in the program cycle; (iv) *Financial Terms and Conditions*, including sources of financing, disposition of resources, financial constraints, regulations governing bids, contracting and disbursements; (v) rules governing *Internal controls and audits*; and (vi) procedures for *entry into force and amending* of the Operating Regulations.

- 3.15 The Operating Regulations also contain five annexes which include: (i) eligibility requirements for the communities (poverty and size criteria), EHRs or UGAs (technical assistance capacity), and municipalities (job retraining programs and management contracts drawn up before construction), plus activities eligible for financing under each component; (ii) selection criteria including project viability and the handling of financing requests based on the order in which they are received, the degree of urgency, during the first year of execution quotas will be assigned by state to ensure balance among the different regions, which will be set based on the number of program-eligible communities in each state; (iii) criteria for determining economic (cost-benefit parameter limits), financial (positive cash flow), technical and environmental viability, including selection and standards governing the preparation of engineering projects, methods of calculating service fees, determining ability to pay, and the environmental procedures of the program; (iv) training modules, management options, optional types of legal status, service level options, accounting procedures, market management, and oversight committees; and (v) model (proforma) documents such as correspondence, records, notices, contracts, terms of reference, etc. The above-mentioned criteria minimize the risk of excessive discretionary authority in the selection of communities.

#### **D. Financing schedule**

##### **1. Financing of the works projects**

- 3.16 Program works will be financed with contributions from the federal government (80%) and the municipality (20%). The contribution of the municipalities will come from own resources and from the Intergovernmental Decentralization Fund (FIDES), to the extent that the projects qualify (see paragraphs 5.33 and 5.34).

##### **2. Operation and maintenance of the water supply systems**

- 3.17 The operation and maintenance of the water supply systems will be the responsibility of the OEs, for which reason the communities will receive suitable training in this area. Operation, maintenance and administration, including depreciation of assets with less than 10 years useful life remaining, will be financed



in their entirety with internal resources generated by the project through fees for service. During the first six months, when the builder is responsible for the system, the fees collected will be allowed to accumulate so as to provide working capital to cover emergencies and any cash deficit. The income corresponding to depreciation expenses will likewise accumulate in this working capital fund. The Operating Regulations contain provisions for the safekeeping of the working capital fund by the OE.

**E. Maintenance of the works**

- 3.18 To ensure that the condition of the works is adequately monitored, the PEU undertakes to include in the loan contract between municipalities and OEs a clause obligating the OE to ensure that the works and equipment financed by the program are given adequate maintenance in accordance with acceptable technical standards. **The executing agency will conduct random inspections to verify compliance with this clause, and will forward a report on its findings to the Bank for up to five years following the last disbursement.**

**F. Status of the program**

- 3.19 An analysis was made of a representative sample of water and sanitation projects for 14 towns with a total value of US\$7 million, in which 13 were deemed viable for the water component, and 4 were also viable for the sewerage and wastewater treatment component at a value of US\$3.9 million, equivalent to 16% of the total component. These projects were prepared in communities that have already begun the project cycle. The preparation of these projects is at the third stage, but they have yet to complete any of the modules which were added during preparation of the operation as the Bank's value-added contribution. At present, four of the communities in the sample have legally established OEs, the remaining 10 are in the process of obtaining legal status for their operating entity. The baseline indicators against which results and outputs (consumption and incidence of diarrhea in children under 5) will be measured have been established for these towns. HIDROVEN will continue developing projects so that by March 2003 it will have 20 viable operations, which is sufficient to begin execution of the program. The preliminary baseline for the projects in the sample has already been identified.

**G. Environmental and social impacts and proposed actions**

- 3.20 The Operating Regulations include the environmental procedures that must be carried out for inclusion of a project in the program. The Operating Regulations describe the guidelines that will govern the preparation of projects in order to take into account gender and ethnicity issues, including instructions for the use of sociocultural guidelines when applicable. The Operating Regulations also contain a list of Venezuelan technical standards that bear upon the design of water and sanitation projects, including the collection, treatment and ultimate disposal of

sewage. Technical specifications for construction and project criteria for minimizing environmental impact will be included in the Operating Regulations and in bidding conditions and construction contracts as appropriate.

## **H. Procurement of goods and services**

- 3.21 Procurement of related goods and services and contracting for construction works will be carried out by HIDROVEN through the PEU in accordance with the Bank's rules and procedures as stipulated in Annex B of the loan contract. International competitive bidding must be used for the purchase of goods valued at US\$350,000 or more, or construction works valued at US\$3 million or more. The hiring of consulting services shall be in accordance with the provisions of Annex C of the loan contract, with selection of firms by international competitive bidding in the case of contracts valued at more than US\$200,000. Tenders for amounts below the above-mentioned thresholds will be as specified in the laws of Venezuela, which is compatible with the Bank's procedures. Annex III-2 contains the Tentative Timetable of Calls for Tender.
- 3.22 Given the small size and geographical dispersion of works projects, it would be difficult to tender them in one lot. Therefore, the program is not expected to involve an international call for tenders for construction works.

## **I. Execution period and disbursement schedule**

- 3.23 The execution period for the program will be four years reckoned from the date the contract takes effect, with a minimum of three years for disbursement. The deadline for physical initiation of works will be three years from the date the contract comes into force. Box 3.1 provides a summary of the timetable for disbursements. Projects from the representative sample valued at US\$3.9 million are ready for tendering. These, together with the other projects that are expected to be ready by the date the contract is signed, will produce the volume required for the disbursements shown in the box.

**Box 3.1**  
**Disbursement Schedule**  
(thousands of US\$)

Year	IDB	Local	Total	%
1	4,200	1,800	6,000	15
2	7,000	3,000	10,000	25
3	9,800	4,200	14,000	35
4	7,000	3,000	10,000	25
<b>Total</b>	<b>28,000</b>	<b>12,000</b>	<b>40,000</b>	<b>100</b>
<b>%</b>	<b>70</b>	<b>30</b>	<b>100</b>	

**J. Revolving fund**

- 3.24 Upon completion of the conditions precedent to the first disbursement, the Bank may advance resources from the loan to establish a revolving fund in the amount of up to 5% of the total proceeds of the Loan. These resources must be managed in a special bank account under the program's name. Acting through the PEU, HIDROVEN must forward to the Bank within 60 days after the close of each six-month period, a consolidated progress report on the status of resources in the revolving account under its control.

**K. Auditing**

- 3.25 The PEU will submit annual financial statements 120 days after the close of each fiscal year, duly audited by a firm of independent auditors eligible on the basis of terms of reference acceptable to the Bank. **Such auditing of accounts will be included as a condition of the contract.**

**L. Monitoring and evaluation**

- 3.26 The IDB Country Office in Venezuela will be responsible for control and monitoring of the program during the execution period. HIDROVEN will submit an initial report to the Bank containing the work plan and a detailed timetable for execution of the program.
- 3.27 When two years have elapsed following the date on which the contract takes effect, or when 50% of the resources allocated to cover direct costs have been committed, whichever occurs first, a midterm review of the program will be carried out to ensure that execution is proceeding in accordance with the requirements included in its design, and that those requirements have proved adequate for achieving the objectives of the program. This will include fulfillment of the objectives related to the project's institutional framework. **This midterm review will be included as a condition of the contract.**
- 3.28 At the same time as the midterm review, an environmental audit will be conducted to verify that environmental procedures are being complied with, and that the agreed mitigating measures are being carried out. **The performance of this audit will be included as a condition of the contract.**

**M. Ex post evaluation**

- 3.29 The executing agency will use loan proceeds to compile and process the data and conduct the ex post evaluation of the program's results. Compilation of data shall begin when the contract comes into force and continue annually on a year-by-year comparative basis until three years after the last disbursement. The first report on this process will contain a detailed description of the procedures used in compiling and processing the indicated annual data which is required for comparison with the

baseline indicators to evaluate the results of the project. The ex post evaluation report will be submitted four years after the last disbursement, using methods agreed to with the Bank during the midterm evaluation of the program. The costs for compiling and processing data will be covered with resources from the program. After the program has been completed, the executing agency will be responsible for continuing to compile the additional data required. The data in question will include at least those for the following indicators: (i) number of communities and inhabitants effectively entering the program per year; (ii) water consumption per hook-up; (iii) amount billed per hook-up; (iv) incremental costs of investment, operation and maintenance of each system; (v) number of cases of water-borne diseases; (vi) profit margin achieved by the OEs in their operations; and (vii) collection ratio of the OEs. The evaluation will include assessment of institutional aspects, including: (i) number of OEs created and in operation; (ii) type of legal status adopted; (iii) number of OEs requesting and receiving technical assistance; and (iv) number of meetings held during execution of the project. **The compilation of data and preparation of the ex post evaluation are included as contract clauses.**

#### **IV. BORROWER, GUARANTOR AND EXECUTING AGENCY**

##### **A. Borrower, guarantor and executing agency**

- 4.1 The borrower and guarantor will be the Bolivarian Republic of Venezuela. Execution of the program will be the responsibility of HIDROVEN, acting through a project executing unit (PEU). **Consequently, it is recommended that it be made a condition precedent to the first disbursement that the borrower and guarantor will sign an agreement with HIDROVEN under which the Borrower undertakes to transfer the program resources to HIDROVEN, and the latter undertakes in turn to execute the program.**

##### **1. HIDROVEN**

- 4.2 As indicated earlier, HIDROVEN is currently going through a transition in which, pursuant to the 2001 Law Establishing the Water and Sanitation Services System, its present functions are being transferred to two institutions: (a) the ONDESAPS which will have responsibility for planning and overall direction of the sector; and (b) SNSAPS which will serve as the sector's regulatory authority. In addition, the regional water companies, which are currently subsidiaries of HIDROVEN, will be converted to Autonomous Management Units. The institutional continuity of the present program is guaranteed since with the disappearance of HIDROVEN, the PEU together with the Community Management Unit will be transferred to the ONDESAPS.
- 4.3 HIDROVEN has put together a work plan and timetable for implementing the changes specified in the law, and has a recently approved loan of US\$174.8 million from the CAF for carrying them out. It is worth noting that HIDROVEN has already separated oversight duties from regulatory functions within its organizational structure into two independent departments that are taking the necessary steps to create the ONDESAPS and SNSAPS which are expected to come into operation during the third quarter of 2003. As part of its effort to transform the EHRs through the creation of the Autonomous Management Units (UGAs), HIDROVEN is conducting the necessary studies that will enable it to establish the optimal number of UGAs per region. This study is being financed under an IDB loan (VE-994/OC), and has as its primary criterion the aim of providing the lowest possible rate structure for consumers.

##### **a. Responsibilities and functions**

- 4.4 HIDROVEN, which was duly incorporated in 1991 under the name of C.A. Hidrológica Venezolana (HIDROVEN), began functioning in conjunction with 10 EHRs. The corporation's mandate is to plan, regulate and supervise the activities of its subsidiary companies in order to provide efficient service at the national level,

to promote the rational use of water, and to transfer the sector's services to local governments. The main responsibilities of HIDROVEN are to develop policies and programs for supplying water, and collecting and treating sewage and the discharge from urban storm drain systems, as well as establishing guidelines for the administration, operation, maintenance and expansion of the systems operated by each of its subsidiaries.

#### **b. Administration and Management**

- 4.5 The administration of HIDROVEN is the responsibility of a board of directors which establishes policies and the overall direction of the corporation, and is in turn aided by an internal audit unit. Legal representation of the company, both before the courts and in extrajudicial proceedings, is left to the Executive Office of the President which is responsible to the Board for administrative, technical and financial management of the company. The President is supported in his activities by a Vice President, five departments (Regulations, Policy Office, Administration, Public Relations and Human Resources), two operating units (Community Management and Cooperation and Financing) and the Office of the Legal Counsel.
- 4.6 The Community Management Unit has as its primary objective to promote and coordinate community participation programs in order to raise the quality of life in local communities by improving their water and sanitation services. Its main duties are to develop community investment programs and provide technical assistance for departmental governments, municipalities and EHRs wishing to organize community participation projects or to contact local and international agencies offering financial resources or technical assistance. This Unit possesses a great deal of experience in executing projects of this nature. In the last three years, it has been called on to evaluate over 80 projects, and has financed around 30 projects for a total of approximately US\$10 million.
- 4.7 This unit is staffed with specialized personnel who provide support in project promotion, community education, and training in the design, operation and maintenance of water and sanitation systems and community management. The unit also coordinates the work of community management under the jurisdiction of the regional water companies, which usually have one or two community action workers on staff. The distribution of duties and responsibilities, as well as the degree of coordination among the personnel that form part of this unit is deemed adequate. Nevertheless, for execution of the proposed program it is considered advisable to create a PEU to oversee all administrative, operating and accounting aspects of the program, and maintain the proper level of coordination between HIDROVEN and the Bank.

### **c. Internal Audit Unit**

- 4.8 The Internal Audit Unit, which reports directly to the Board of Directors, applies the standards and procedures established by the Office of the Controller General of the Republic and the Ministry of Finance. This unit is responsible for conducting ex post control of budget expenditures, purchases and management of funds. It has been agreed with HIDROVEN that its Internal Audit Unit will be assigned to the PEU where it will act as internal auditor, reviewing the accounting records and applying internal control standards. In addition, it is recommended that the financial statements submitted by the proposed program during the execution period be audited by an independent firm of public auditors acceptable to the Bank.

## **2. Municipalities**

- 4.9 There are 335 municipalities in Venezuela which, under the new law governing the water and sanitation sector, are to be responsible for managing their rural water supply systems. The municipal governments will take possession of the infrastructure in the communities under their jurisdiction provided they are willing to participate in the project by supplying 20% of the counterpart resources required for the program. In addition, the municipality will be assisting the PEU throughout the project cycle: initially by helping to promote the program, then by agreeing to award a concession for the administration, operation and maintenance of the water supply system to the community once it is duly organized, and finally by providing technical assistance through the UGAs, which will supply a community action worker and a plumbing expert to assist the community association responsible for managing the water and sanitation system.

## **3. Other entities participating in the program**

- 4.10 HIDROVEN, through the PEU, will receive support from several other institutions such as the Intergovernmental Decentralization Fund (FIDES), through which the municipalities will be able to finance their local counterpart contributions. As well, HIDROVEN will be able to draw upon the support and technical assistance of the SAVIR. A brief description of these organizations which form part of the proposed institutional framework follows.

### **a. Intergovernmental decentralization fund (FIDES)**

- 4.11 FIDES, which is attached to the Ministry of Planning and Development, was created by Decree 3265 in November 1993 and subsequently modified in October 2000. The main objective of the Fund is to promote the decentralization and deconcentration of public services and departmental and municipal government competencies likely to be turned over to local communities for direct administration. The resources of this Fund come under the Fiscal Budget Act, with an annual appropriation of US\$500 million. By law, 60% of these funds must be

allocated to projects submitted by the departmental governments, with the remaining 40% going to those proposed by municipalities. At the same time, the municipalities and departmental governments receive appropriations based on number of inhabitants (45%), total land surface (10%) and need for investments (45%). The Fund has set the following investment priorities: basic infrastructure (water, sewage, transport, electricity and housing), education, health and agriculture, especially projects designed for conservation, maintenance, improvement, restoration, clean-up and protection of the environment and natural resources.

- 4.12 For purposes of the present projects, the contribution of funds from the municipalities will be guaranteed in law since Article 24 of the law creating the FIDES requires the departmental government and municipal authorities to allocate at least 20% of their annual appropriation to finance programs and projects submitted by organized community groups, neighborhood associations and non-governmental organizations. Communities gain access to these resources by presenting investment projects to their municipal or departmental governments, which are required to submit these for consideration by the Board of Directors of FIDES. The law creating FIDES specifies that in the event a municipality or departmental government fails to forward a project to the Fund within a period of 30 days, the community in question can present its project directly to FIDES.

**b. The Rural Housing Authority (SAVIR)**

- 4.13 SAVIR forms part of the Ministry of Public Works and Government Services and was created in January 1989 under Decree 2708. Its primary mandate is to build housing units and provide basic water and sewage disposal services in rural areas. One of SAVIR's operational branches is the Rural Water Supply Division whose task it is to bring water services to rural areas throughout the country that do not yet have access to this resource, as well as providing technical assistance for municipal authorities. The Division assists towns with fewer than 5,000 inhabitants, has an annual budget of approximately US\$9 million and carries out some 160 projects per year. It is important to point out that the duties and responsibilities of SAVIR and its Rural Water Supply Division do not include the operation and maintenance of water and sanitation systems, so that they have neither the budget nor the human resources to do so.
- 4.14 During preparation of the program, SAVIR and HIDROVEN agreed to join forces in that SAVIR will assist the PEU by providing: (i) supervision of activities in the preparation of projects; (ii) technical assistance for the OEs on technical matters; and (iii) digitalized data on rural water systems. For its part, HIDROVEN will provide support in the form of community training programs.



## V. FEASIBILITY AND RISKS

- 5.1 The proposed program is entirely consistent with the Bank's policy on Public Utilities (OP-708). Specifically, the operation has as its object to promote access to services by low-income communities in rural areas, and introduces the principle of sustainability through the financing of projects which are technically, financially, institutionally and economically efficient, while ensuring the quality of the service and without compromising broader national objectives such as preservation of the environment.
- 5.2 The program will be carried out during a period of institutional transition introduced recently as Venezuela seeks to create a more effective legal framework by, among other things, drawing a clear separation between policy-making, regulatory and operating functions. The program proposes poverty-targeted subsidies while guaranteeing the system's financing through the budgets of public stakeholder entities, thereby not only preserving the principle of sustainability but also helping to meet one of the millennium goals of bringing water and sanitation to people who have lacked these essential services up to now. By the same token, the program advocates adoption of management models in line with the goal of sustainability by encouraging private sector participation in the management of the systems once they are built. The operating models to be used under the program range from management by the community itself, to a builder-operator arrangement. Finally, the program will be backed by the firm political commitment of the government as reflected in the recently issued regulations to implement the law mandating the supply of water and services, which contain a provision requiring all public entities to adopt the principles and policies established by the government for the present operation, as the guiding principles for the financing of rural water systems in Venezuela. **Prior to the first disbursement, the PEU must present evidence to the Bank that the regulations of the law regarding the rural water system service delivery plan have been placed in effect. These regulations are to be consistent with the terms and conditions previously agreed upon with the Bank.**
- A. **Technical feasibility**
- 5.3 The program is considered both feasible and highly justified from a technical standpoint since it will satisfy the needs of persons living in rural areas and small towns who currently either lack water and sanitation services altogether or receive less than adequate service in terms of the volume, continuity of service, pressure, and, in some cases, quality of the water provided by the existing system. In addition, the program meets the need for solutions to public health and environmental pollution problems caused by the absence or inadequacy of infrastructure for the collection and treatment of sewage.

- 5.4 The basic designs and studies for the projects in the representative sample have been prepared according to current Venezuelan standards, which are consistent with generally accepted engineering principles. The designs drawn up are for least-cost, technically viable alternatives.
- 5.5 HIDROVEN has the technical capacity and experience necessary to oversee the hiring of contractors and supervision of works. Local and foreign companies are available in sufficient numbers to carry out the works and supply the materials and equipment, whether produced domestically or imported. The training given to the OEs and the work done with the community will produce technical personnel and financial resources to ensure that once they are built, the systems financed by this program will be properly managed and maintained.
- 5.6 The implementation schedule takes into account the characteristics of the works projects, the time it takes to complete bidding procedures, and HIDROVEN's experience in carrying out this type of project.

**B. Institutional viability**

- 5.7 The institutional viability of the program rests on three major elements: (i) the strength of the set of mechanisms used for its operation and development; (ii) the legal, organizational and financial capacity of the institutions responsible for its development; and (iii) the willingness of the stakeholders to participate based on the incentives introduced by the program.
- 5.8 The principal *mechanisms* used to develop the program are the project cycle and the program's Operating Regulations, a summary of which is provided in paragraphs 3.13 through 3.15 of chapter III. With the creation of the project executing unit (PEU) and the precise definition of its functions in the project cycle and the Operating Regulations, each of the activities required for implementing the program is spelled out in detail including the various documents and agencies responsible for carrying out the different steps of the cycle. This careful preparation, together with the pooling of information by the entities and officials involved, will ensure efficient execution of the program according to the principles and standards laid down in the Operating Regulations. In addition to specifying each step in the cycle, during the preparation of the operation, it was possible to establish two important links therefor: (i) consulting firms to assist the communities in the conceptual design and preparation of projects; and (ii) the SAVIR. Under the first of these arrangements, the various activities involved in the preparation of individual projects will be carried out in their entirety by firms under contract to the PEU at the different stages of the project preparation process, with the stipulation that each project is to be prepared with input from the communities and under the supervision of the PEU. The SAVIR interfaces with the program by providing logistical support for project development through the Service's regional offices, its data base on rural water systems, and the help its personnel can provide with supervisory tasks.

- 5.9 The *institutional* capacity of HIDROVEN to act as executing agency of the program has been evaluated on the basis of its legal, organizational and financial capacity. The conclusion drawn from this analysis is that the corporation has a proven capacity to carry out this program. Since under the new law, HIDROVEN is scheduled to disappear in 2006, its activities during the intervening period will be focused on implementing the decentralization plan contained in that legislation, which calls for two components: (i) decentralization of urban water and sanitation system from the EHRs to management units which are regional in scope but in fact operate at the municipal level; and (ii) transfer of rural water supply systems to the municipalities. The present program is part of the second component.
- 5.10 In order to guarantee smooth execution of the program, HIDROVEN has created a project executing unit (PEU) attached to the Office of the President. HIDROVEN has experience carrying out similar projects and is currently executing an operation in the water sector with the Bank's assistance, whose disbursement period will be completed this year (loan 994/OC for US\$60 million). HIDROVEN's performance in executing the program has been found to be satisfactory by the Bank. The experience gained in that operation, together with the features built into this program, will ensure equally efficient execution in the present case. The total financial commitment under this operation represents 10% of the annual investments in execution by the Company.
- 5.11 The main participants in the program—the communities, municipalities and the central government represented by HIDROVEN—have sufficient *incentives* to participate in the program and to ensure its proper development. For HIDROVEN, the present program will enhance the activities it is carrying out in the same sector at the urban level, and by heading this program the Company will be fulfilling its mandate to transfer water and sanitation systems to the municipalities under the new sectoral law. At the same time, the present operation will clear the way for HIDROVEN to fulfill the functions it is expected to have as the sector's apex body. The program calls for creation of a financial mechanism for attracting subnational funding which, together with the contribution from the national level financed by the Bank's loan, will ensure sustainable transfer of the services to the municipalities. From the perspective of the *municipalities* which are required by law to accept responsibility for the systems, the program will enable them to gain access to an 80% transfer to finance investments in the rural sector, and receive technical assistance to deliver the systems via service contracts to the communities or entities created for that purpose.
- 5.12 Finally, the *communities* have the greatest incentive to participate since the program as a whole is designed to solve a critical problem they face, at the same time providing them with a major subsidy in the form of the program's investments and the technical assistance to ensure effective operation and maintenance of their water and sanitation systems. Moreover, they will be assured of obtaining budget appropriations for effective operation of these systems.

- 5.13 In short, the combination of nonreimbursable funding, long-term financing, and the level of political commitment on the part of departmental and municipal governments in support of HIDROVEN, will guarantee the overall feasibility of the program.

### **C. Socioeconomic viability**

- 5.14 To verify the socioeconomic viability of each project in the representative sample, three types of analysis were performed: (i) supply-demand balance to verify that the design is sufficient to meet the need for services; (ii) cost-benefit; and (iii) cost recovery. The costs and benefits of investment, operation and maintenance used in the analysis were incremental cost at efficiency prices.
- 5.15 As for construction works, the program will finance basically two types of projects, or a combination of the two: (i) the water supply system, which may include rehabilitation, expansion or creation of new systems; and (ii) disposal of wastewater which may be by either individual means or via a public sewerage system with collection, treatment and disposal of wastewater.
- 5.16 In order to perform a cost-benefit analysis on projects not included in the sample, cost-efficiency models were developed and used to determine the maximum values for cost per connection. These models were based on the evaluation of the 14 projects included in the representative sample.
- 5.17 The basic data and econometric models used in the analysis, and the description of the method employed in the evaluation can be found in the Region 3 files.

#### **1. Cost-benefit analysis**

##### **a. Costs**

- 5.18 The costs included in the analysis are the incremental costs for investment, operation and maintenance. These were then converted to economic costs using the implicit costs published by the Office of Coordination and Development (CORDIPLAN).

##### **b. Water supply projects**

- 5.19 To perform a cost-benefit analysis of the water projects in the database for configuration of the cost-efficiency model, the SIMOP model developed by the Bank was used. The economic benefits considered were: (i) the savings in resources compared to purchasing water from tank trucks, and in time required for individual hauling of water, which worked out to an average of US\$2 per m<sup>3</sup>; and (ii) an increase in water consumption, the value of which was based on the demand curve. All of the projects involved are rehabilitation works with expansions accounting for less than 20% of the total number of customers.

- 5.20 Projected demand was based on growth statistics for the municipality's population assuming that this would equal that of the community served by the project (rate of growth between 0.5% and 3%). For purposes of the analysis, per capita use was ascertained from an econometric model of demand that was prepared for the present program, giving an average of 160 L/h/day. This model was also used to estimate price-elasticity of demand, resulting in a figure of  $-0.37$ .
- 5.21 The results of this evaluation show that for the 14 projects analyzed at a total value of US\$2.03 million, a project for US\$0.4 million is not viable. The cost per equivalent connection<sup>8</sup> for viable projects is US\$423. The project's non-viable cost per connection is US\$3,000. The threshold cost per connection at the point where projects are not viable was calculated. To this end, an econometric model was prepared in which profitability was measured as a function of cost per equivalent connection, the type of system (gravity or groundwater), the cost of alternative sources, etc. Based on this model, the estimated threshold value was US\$640.

### **c. Sanitation projects**

- 5.22 Under projects for collection of sewage, the without-project scenarios involved blocked sewerage systems and pit privies that frequently overflow with resultant health risks for the inhabitants, particularly children, or dumping of wastewater into streets or down storm drains, which in most cases simply carry effluents without treatment. These problems tend to reduce water consumption (to avoid overflowing wastewater systems) and threaten the well-being of the population due to detrimental effects on health and the environment.
- 5.23 The benefits from the projects in the sample were calculated by measuring costs savings and the increase in well-being, as against willingness to pay (WTP) for the service. To determine WTP a contingent valuation method was used based on the rate of response to a survey setting it at 5% of family income. To facilitate the evaluation of the projects in this program, benefits were transferred using an econometric model of WTP developed in another program for populations of similar size and socioeconomic conditions. This model presents WTP as a function of socioeconomic variables such as family income and degree of satisfaction with the present system for disposal of sewage. In order to apply the model to the projects in the present program, the independent variables were determined by means of a survey of the target population. Average WTP per family among the projects analyzed is US\$10.7, varying between US\$7 and US\$14 per month. The number of connections was based on the growth statistics for the municipality, which is assumed to be the same for the community that will receive the service.

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<sup>8</sup> Equivalent connection is defined as a connection equivalent to the new connections plus those that, being connected to the system, are not receiving water.

- 5.24 The results of the evaluation show that of the 14 projects analyzed at a total value of US\$2.93 million, four are viable at a value of US\$225,000. The cost per connection for viable projects is US\$205. The cost per connection for non-viable projects is US\$1,300. The threshold cost per connection at which projects are non-viable was calculated as well. To do this, an econometric model was used in which profitability was determined as a function of cost per connection. It was estimated that the threshold value based on that model was US\$430. In communities where a sewerage system is not a viable option, individual systems will be built using the most economical, least-cost alternative.
- 5.25 Wastewater treatment plants (US\$2.04 million), which will generally be of the stabilization pond or trickling filter type, were evaluated using least-cost analysis to determine constraints on the quality of effluent required, bearing in mind the level of purity of the receiving body.

## **2. Cost recovery program**

- 5.26 The fee structure has been designed to ensure that the OE will be financially sustainable provided the system does not require substantial expansion. The systems have been designed to accommodate population growth out to a 20-year horizon. The communities are therefore not expected to require financial aid during that period so long as the water fee keeps up with the rate of inflation affecting the materials needed to operate the systems.
- 5.27 To encourage rational use of water, the rate charged will be based on cubic meters used. To this end, financing will be provided for installation of residential meters in towns requesting micro-metering, and the training components will include a module to introduce this method and show users the benefits of this system.
- 5.28 The final rate structure for each community will be designed by the OE pursuant to the Operating Regulations. The Operating Regulations' guidelines for the design of this rate structure include a model for calculating the fee per connection based on the user's ability to pay. The rate structure applied must guarantee that the OEs are financially sustainable, i.e., the revenues must at least cover operating, maintenance and depreciation costs on assets with less than 10 years useful life remaining. For users without the ability to pay for basic consumption, a targeted system of subsidies will be set up pursuant to the general contents of the sector's legislation. The resulting fees will vary between US\$0.09 and US\$0.020 per m<sup>3</sup> for those covering operating, maintenance and depreciation costs, and between US\$0.17 and US\$0.63 for those covering long-term marginal cost.

## **D. Impact on poverty**

### **1. Ability to pay**

- 5.29 Calculation of the ability to pay of beneficiaries was based on their monthly bill. For purposes of analysis it was verified that the amount to be paid for the service was less than 5% of family income. Monthly family income was determined in a representative survey carried out in each of the communities included in the sample.
- 5.30 The results of this calculation were that 73% of the population could pay the basic rate, and 50% could pay long-run marginal costs. That leaves 27% unable to pay the basic rate. One way to cover this deficit would be to charge an additional amount for those with the ability to pay, a form of cross-subsidization. Another way which is specified in the law, is to have the municipality provide a targeted subsidy under which it will pay the difference between what the user can afford to pay and the basic consumption fee. The version of the Operating Regulations produced by HIDROVEN will present the subsidization plan to be adopted under the law and its implementing regulations.

### **2. Poverty targeting**

- 5.31 The operation qualifies as a poverty-targeted program since its benefits are extended exclusively to communities the majority of whose inhabitants are poor. These communities were selected using geographical targeting and based on the Human Development Index, which uses a combination of indicators pertaining to income, health, education and security. The communities included in the representative sample are in strata 4 and 5, thus meeting the eligibility requirements.

## **E. Financial viability**

- 5.32 The analysis of viability presented below indicates that the municipalities have the capacity to supply the local counterpart contribution during the program's execution period. In addition, the financial viability analysis conducted for the 14 projects of the representative sample show that operating revenues from fees for service will enable them to cover all of their operating and maintenance costs plus depreciation of assets with a useful life of less than 10 years, and other minor costs.

### **1. Local counterpart contribution**

- 5.33 The municipality of a community in which works are to be carried out will be responsible for contributing 20% of the cost of the project, while the remainder is to be supplied by the central government through HIDROVEN in the form of a subsidy. To meet their local counterpart commitments, the municipalities can draw upon tax revenues and transfers from the central government. A statistical analysis of the budgets for each of these municipalities in 2000 and 2002 indicates that on

average they have sufficient resources to cover the local counterpart funding required, which will represent about 3.7% of the total urban development and housing budget which includes investments in water supply systems for rural communities. This analysis shows clearly that the municipalities will have sufficient resources to meet their local counterpart commitment. A more detailed analysis can be found in the technical files for Region 3.

- 5.34 It should be noted as well that the mayoralties and communities also have resources allocated to them by the FIDES for investments of this type, which can be used as local counterpart contributions. Article 24 of the law creating the FIDES requires the departmental government and municipal authorities to allocate at least 20% of their annual appropriation to finance programs and projects submitted by organized community groups, neighborhood associations and other types of nongovernmental organizations. On average, FIDES allocates some US\$1.6 million to each municipality. HIDROVEN works in coordination with FIDES to evaluate projects in order to streamline the process and facilitate administration. The annual average local counterpart contribution under the present program's execution period is estimated at US\$3 million, which is equivalent to 0.6% of the annual budget of FIDES. This analysis indicates that the FIDES will have sufficient resources to meet the municipalities' local counterpart commitment.
- 5.35 An analysis was made of the local counterpart requirements for the projects in the representative sample as well, and again showed that the municipalities in which the projects will be executed are able to provide the local counterpart contribution.

## **2. Financial viability of the projects in the sample**

- 5.36 The viable projects in the sample have a client base of approximately 400 connections. The method used is established in the Operating Regulations and is based on the following principles: (i) operating revenues from collection of water rates must be sufficient to cover the cost of operations, maintenance and administration, plus depreciation on assets with less than 10 years useful life remaining; (ii) water fees must account for at least 85% of total invoice value; and (iii) internal cash generation must be sufficient to cover changes in working capital and other minor expenses.
- 5.37 Analysis of the viability of the projects in the sample indicate that these are financially viable according to the above-mentioned criteria. Revenues from fees for service, which are less than the community's ability to pay, will allow the community to cover all of its expenses and costs associated with the operation of the water supply system. This analysis is based on the following aspects:
- a. Average operating revenues for the sample are approximately US\$18,000 per year (US\$1,500/month), which is sufficient to cover the costs for operation,



maintenance and overhead before depreciation, with a profit margin on operations of approximately 20%.

- b. The average monthly water fee for the sample projects is around US\$3.7/month per connection, which is below the average monthly ability to pay for the communities. Average family income has been used in other operations approved by the Bank as an indicator to support the viability of charging fees for service (based on a rate of roughly 5% of family income).
- c. During the first five years, cash flow projections under the sample projects is greater than US\$1,000/year. The cash balance at the close of the period will be approximately US\$8,000, which includes the working capital reserve fund created at the start of the period.

#### **F. Environmental and social viability**

- 5.38 An environmental assessment was carried out for the 14 projects in the representative sample. This assessment was conducted in accordance with Venezuelan law (Decree 1,257) and served as the basis for preparing the environmental procedures to be followed in the program.
- 5.39 The results of the environmental assessment confirm that the project will have an overall positive impact on the environment. Among the positive effects identified for the sample project are the following: (i) improvements in the health of the local inhabitants due to availability of a sufficient supply of good quality water; and (ii) improvement of environmental quality thanks to sewage collection and treatment systems. One of the most important positive social impact of the program will be the organization of community associations to manage local water and sanitation systems, a method that could be used to solve other community problems.
- 5.40 The environmental and social feasibility of this operation will be ensured through the following actions: (i) incorporation of environmental technical specifications (to mitigate and prevent adverse effects on the environment) in construction contracts and subsequent operation and maintenance of the works; (ii) inclusion of environmental procedures for classifying the projects approved for the program according to their environmental and social impact, and proposing the necessary mitigation measures; (iii) ensuring that the cost of measures required to mitigate adverse effects is included in the overall cost of each project; and (iv) organization of the community to select the level of service its member want and can afford, and to be responsible for the operation and maintenance of its systems.
- 5.41 Decree 883, published in special *Official Gazette* 5,021 on 18 December 1995, contains the regulations governing control of the water quality of the bodies of water and effluents. This act provides the regulatory framework for:

(a) classification of surface water; (b) control of effluents; (c) monitoring and inspection; and (d) environmental restoration.

- 5.42 Article 4 of the decree establishes the criteria for classification of water quality, including the parameters for each type and subtype. Under this classification system there are seven types, with water intended for human consumption being classed as type 1. The Ministry of the Environment and Natural Resources (MARN) is responsible for protecting water quality in each of Venezuela's watershed areas.
- 5.43 The environmental procedures adopted for the program require that a simplified environmental and social impact summary be prepared for each project that qualifies for the program. The summary enables the person in charge of the project executing unit to classify individual projects in one of three categories:
- a. *Category I.* Simple projects with localized effects of short duration, for which there are known mitigants available through observation and/or enforcement of national standards governing the construction and subsequent operation of works projects.
  - b. *Category II.* Projects of some complexity which have a moderate impact on the environment requiring the adoption of certain mitigating measures to be identified by means of a special environmental impact study.
  - c. *Category III.* Projects that have a major impact on the environment and therefore require a full environmental impact assessment to propose appropriate mitigating measures and/or the need to alter the original project.
- 5.44 Each category requires a different study based on terms of reference agreed to in advance. For the simplest projects (category I), the MARN will establish the requirements that must be met in order to obtain the respective authorization or approval. Projects with moderate impact (category II) require a specific environmental evaluation according to specifications set by the MARN. Those expected to have a major impact on the environment (category III) require the preparation of a full-fledged Environmental Impact Assessment in order to propose the appropriate mitigating measures and/or the need to modify the original plans for the project. This results in an Environmental Impact Declaration which must be issued by the MARN. All expenses incurred for mitigating measures will be included in the costs of the respective project.
- 5.45 Of the viable projects analyzed in the representative sample, nine were classified as category I and four were placed in category II.
- 5.46 Three of the projects analyzed have environmental liabilities in connection with water treatment plants that had to be abandoned for lack of maintenance. In each case, the construction costs for the new treatment plant take into account the added cost of cleaning up the former site.

- 5.47 The Operating Regulations for the program include the manual of environmental procedures and the technical specifications that must be observed in order to mitigate environmental impact, which is to be included in all contracts for construction works. These procedures emphasize the need to adapt solutions to the local circumstances of each community including, where necessary, ethnoengineering guidelines compiled by the Bank. An environmental audit will be carried out at the halfway point in the program to verify that the environmental procedures are being observed and that the agreed mitigation measures have been carried out.

## **G. Risks**

- 5.48 **Willingness to pay.** Risk: Traditionally, rural water and sanitation systems have been operated by government agencies in order to supply communities with water and sanitation facilities without charging for the service. This program involves a change in culture that must be assimilated by the communities in advance. Mitigation: To this end, an education and advocacy module has been designed which will raise awareness of the costs involved in providing these services, and the need to pay these costs in the form of fees for service. The articles of incorporation creating the OEs will specify the necessary measures to ensure payment of fees to operators, including interruption of service.
- 5.49 **Institutional Support.** Risk: The proposed program calls for a major change in the financing of operations in Venezuela's water and sanitation sector, which has traditionally relied on the State for universal subsidies and nonsustainable investment of public revenues. This program marks a significant departure from that arrangement, introducing financial sustainability as its key requirement based on the principles laid down in the new law governing the sector. There is a risk that the criteria established in this program may not be accepted by all of the traditional stakeholders involved. Mitigation: The incentives built into the program and the legal regulations agreed upon for the program will lessen this risk.
- 5.50 **Participation by the municipalities.** Risk: Lack of participation by the municipalities in providing the required 20% local counterpart. Mitigation: By law, the municipalities are required to deliver water and sanitation services. This program represents an incentive for the municipalities since 80% of the needed investments in rural water supply systems are being financed. In addition, the program supports the municipalities' work by simplifying the procedures for obtaining FIDES funding and by providing training for municipal staff that will provide support to the project.

**SUPPORT FOR RURAL AND SMALL-TOWN WATER SUPPLY SYSTEMS  
(VE-0140)**

**LOGICAL FRAMEWORK**

NARRATIVE SUMMARY	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<b>A. End</b>			
<p>1. To help improve living conditions for the inhabitants of poor communities with up to 5,000 inhabitants.</p>	<p>The human development index of the communities covered by the program increases in such a way that they are able to improve by at least one stratum three years after the respective works are completed.</p>	<p>Records of the National Statistics Institute.</p>	<p>Sustainability The propensity of the users to finance 100% of the operating costs and of short-term asset investments is maintained.</p>
<b>B. Purpose</b>			
<p>1. Incidence of water-borne diseases in beneficiaries reduced through the increase in coverage and per capita consumption of water supply and sanitation services.</p> <p>Financial mechanism in place for communities to be covered by water and sanitation system administered by financially sustainable operating entities (OEs).</p>	<p>Per capita consumption of water is at least 120 L/h/d in communities participating in the program.</p> <p>Acute diarrhea in children under 5 years of age reduced by 10% in communities taking part in the program.</p> <p>The systems upgraded under the program are economically viable as determined in the ex post evaluation.</p> <p>90% of OEs running three years after final disbursement with:</p> <ul style="list-style-type: none"> <li>• 24-hour uninterrupted service</li> <li>• water quality consistent with national standards</li> <li>• positive cash flow</li> </ul>	<p>Records kept by: HIDROVEN, the OEs, Ministry of Health and Social Development (MSDS), Servicio Autónomo de Vivienda Rural [Rural Housing Authority] (SAVIR), mayoralty offices, and communities.</p>	<p>The national policy of decentralization and financial self-sustainability of public water supply systems is maintained.</p> <p>The municipalities participate by contributing 20% of the investment and the targeted subsidies for the operation, and monitoring and evaluating the systems.</p>

NARRATIVE SUMMARY	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<b>C. Components</b>			
<b>1. Institutional strengthening and technical assistance</b>  1.1 Water and sanitation systems operated and administered efficiently and on a sustainable basis by the OEs.	100% of the (50) rural water systems covered by the program are being operated efficiently by communities.  Positive operating profit margin and collection ratio of at least 85% in the communities covered by the program three years after operations begin under the OEs.  At least 60% of staff who have ended their contracts with local governments have been rehired by the OEs.	Accounting records of the OEs.         Local government and PEU records.	Demand subsidies are paid in a timely way by the responsible entities.
1.2 Institutional structure of sector strengthened and training provided for personnel who will operate water and sanitation services.	50 communities with less than 5,000 inhabitants working in coordination with their municipalities and other institutions in the water supply and sanitation sector trained to take over water and sanitation services within a period of three years.	Agreements signed between the communities, municipalities and/or other institutions for the provision and management of water and sanitation systems.  Contracts for training programs signed.	Favorable relations for community integration
<b>2. Water and sanitation works</b> Beneficiary communities receive sufficient volume of water on a continuing basis through water supply systems, with access to collection, treatment and wastewater disposal systems.	100,000 inhabitants in at least 50 communities are receiving adequate water and sanitation services by the completion of the program, as follows: 13 communities by end of year one; 13 by the end of year two; 13 by the end of year three; and 11 by end of year four.  Communities receiving water and sanitation services under the program are satisfied (maximum of 5% complaints per year).	Records kept by HIDROVEN, OEs, communities, MSDS.         User surveys.	Technical assistance provided by the UGAs and EHRs for efficient operation of rural water supply systems.

NARRATIVE SUMMARY	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
	In participating communities, the water and sanitation systems are complying with the country's water quality standards.	Records kept by: Municipalities, HIDROVEN, water and sanitation service providers, SAVIR, MSDS, mayoralty offices, and associations of communities.	

SUPPORT FOR RURAL AND SMALL-TOWN WATER SUPPLY SYSTEMS						
VE-0140						
ANTICIPATED CALLS FOR TENDER						
ITEM	LOTS	DIRECT COSTS (US\$000s)	FINANCING		METHOD (1)	DATE OF PUBLICATION (SEM/YEAR) (2)
			IDB	LOCAL		
<b>A. Projects in sample</b>						
<b>WATER AND SANITATION WORKS</b>						
1. Apure	1	693	80	20	LCB	I/2003
2. Aragua	1	1,224	80	20	LCB	I/2003
3. Carabobo	1	586	80	20	LCB	I/2003
4. Guárico	1	839	80	20	LCB	I/2003
5. Lara	1	592	80	20	LCB	I/2003
6. Portuguesa	1	688	80	20	LCB	I/2003
7. Táchira	1	1,762	80	20	LCB	I/2003
8. Zulia	1	430	80	20	LCB	I/2003
<b>COMMUNITY DEVELOPMENT CONSULTANTS</b>						
1. Apure	1	110	80	20	LCB	I/2003
2. Aragua	1	200	80	20	LCB	I/2003
3. Carabobo	1	100	80	20	LCB	I/2003
4. Guárico	1	140	80	20	LCB	I/2003
5. Lara	1	100	80	20	LCB	I/2003
6. Portuguesa	1	115	80	20		I/2003
7. Táchira	1	300	80	20		I/2003
8. Zulia	1	75	80	20	LCB	I/2003
<b>OTHER CONSULTANTS</b>						
1. Studies and preparation of projects	5	1,500	100	-	ICB	II/2003
2. Firms to supervise works	25	1,250	60	40	LCB	II/03 - II/05
<b>B. Other projects (to be identified)</b>						
<b>WATER AND SANITATION WORKS</b>	12	21,580	80	20	LCB/ICB	I/04 - II/05
<b>COMMUNITY DEVELOPMENT CONSULTANTS</b>	12	3,360	80	20	LCB/ICB	I/04 - II/05
<b>PURCHASE OF EQUIPMENT FOR THE PEU</b>	1	150	50	50	LCB	II/2003

ICB: International competitive bidding  
LCB: Local competitive bidding

(1) ICB is mandatory for lots valued in excess of US\$3 million for works, and US\$300,000 for goods and related services  
(2) Approximate date